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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,357	08/16/2006	Boaz Cohen	26886U	9206

20529 7590 08/03/2009

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EXAMINER	
REIS, RYAN ALEXANDER	
ART UNIT	PAPER NUMBER
3752	
MAIL DATE	DELIVERY MODE
08/03/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,357	COHEN, BOAZ	
	Examiner	Art Unit	
	RYAN REIS	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-25,27-40 and 42-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-25, 27-40 and 42-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 22-25, 29, 31, 32, 39, 40, 42, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's disclosure of the Prior Art (Prior Art) in view of Patent Abstracts of Japan 62171515 to Yoshihiro (Yoshihiro), and further in view of US Patent 6,439,477 to Sweet et al. (Sweet et al.).

As to claims 22 and 39, the applicant discloses the Prior Art teaches a rotary sprinkler comprising a rotor (16) with an axle (38) having a tip (39), and a thrust bearing (14) comprising a socket (26) for receiving for rotation the axle; the socket having a bottom (30) that, during operation of the rotary sprinkler, abuts the tip of the axle in a contact zone. The Prior Art does not disclose the sprinkler further comprises a hard element with a concave surface constituting at least a part of the bottom including the contact zone, the element being made of a harder material than the tip.

However, Yoshihiro discloses an axel (5) having a tip (7) which abuts a hard element (1), wherein the hard element is made of a harder material than the tip for the purpose of lengthening the life of the bearing (see abstract).

Furthermore, Sweet et al. discloses an axel (240) which abuts a hard element (232) having a concave surface (at 238; see Figure 8) for the purpose of reducing vibration while rotating.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the Prior Art device with a hard element as taught by Yoshihiro and a concave surface in the hard element as taught by Sweet et al. in order to lengthen the life of the bearing and reduce vibration while rotating.

As to claim 23, the applicant discloses the Prior Art teaches the tip comprises plastic (see page 1, lines 11 and 12 of applicant's specification).

As to claim 24, the applicant does not expressly disclose the Prior Art teaches the rotor with the axle and the tip is one integrally molded plastic part.

However, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the rotor, axle and tip one integrally molded plastic part, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

As to claims 25 and 40, Yoshihiro discloses the hard element comprises a polished surface in the contact zone (see abstract: "specifying surface roughness" and "surface roughness is 0.1-6.0μm").

As to claims 29 and 45, Yoshihiro discloses the hard element comprises a ceramic (see abstract).

As to claims 31 and 47, Yoshihiro discloses the hard element comprises stainless steel (see abstract).

As to claims 32 and 42, Yoshihiro discloses the hard element is formed as a plate (see abstract).

3. Claims 22, 23, 32, 35-39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Australian Patent Publication 54,127/73 to Harvey (Harvey) in view of applicant's disclosure of the Prior Art, and further in view of US Patent 6,439,477 to Sweet et al.

As to claims 22 and 39, Harvey discloses a rotary sprinkler comprising a rotor (4) with a socket (9) having a bottom (at 10), and a thrust bearing (at 9) with an axle (6) having a tip (7), the socket being adapted to receive for rotation the axle so that the tip abuts the bottom in a contact zone, wherein the sprinkler further comprises a hard element (10) constituting at least a part of the bottom including the contact zone, the element being made of a harder material than the tip. Harvey does not disclose the rotor

with the axle and tip, and the thrust bearing with the socket or the hard element having a concave surface.

However, the applicant discloses the Prior Art teaches a rotary sprinkler comprising a rotor (16) with an axle (38) having a tip (39), and a thrust bearing (14) with a socket (26) having a bottom (30).

Furthermore, Sweet et al. discloses an axel (240) which abuts a hard element (232) having a concave surface (at 238; see Figure 8) for the purpose of reducing vibration while rotating.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the device of Harvey with the axle and tip on the rotor and have the socket on the thrust bearing as taught by the Prior Art, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167. Furthermore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the device of Harvey with a concave surface in the hard element as taught by Sweet et al. in order to reduce vibration while rotating.

As to claim 23, Harvey discloses the tip comprises plastic (see page 3, lines 17 and 18).

As to claims 32 and 42, Harvey discloses the hard element is formed as a plate (see Figure).

As to claim 35, Harvey discloses the socket has an inlet opening of diameter D0 and a peripheral wall between the inlet opening and the bottom, the socket being configured for slidably receiving the axle through the inlet opening, wherein the tip has diameter D1 close to D0 while an adjacent portion of the axle had diameter D2<D1, wherein when the tip and the inlet opening are in a coplanar relationship, the tip is in annular contact with the inlet opening (see page 4, lines 1-20; see also Figure).

As to claim 36, Harvey discloses the rotor is configured for sliding in response to water flow, into a position wherein the tip abuts the bottom, and the rotor is configured for sliding back, in absence of water flow, into a position wherein the tip is aligned with the inlet opening (see page 4, lines 13-21).

As to claim 37, Harvey as modified above discloses the sprinkler is configured for operating with the socket disposed above the rotor.

As to claim 38, Harvey discloses the tip is selected from the group consisting of: a ball, a cylinder, a cone, a disc, and another body of rotation (see Figure).

4. Claims 27, 28, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Australian Patent Publication 54,127/73 to Harvey in view of

applicant's disclosure of the Prior Art and US Patent 6,439,477 to Sweet et al. as applied to claims 22 and 39 above, and further in view of GB Patent Publication 530,912 to Nagy (Nagy).

As to claims 27, 28, 43 and 44, Harvey as modified above does not disclose the hard element being made of industrial sapphire stone or industrial ruby stone.

However, Nagy discloses a hard element (10) made from sapphire or ruby (see page 2, lines 79-84) for the purpose of minimizing friction and reducing wear (see page 1, lines 14-21).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the hard element of Harvey from industrial sapphire or industrial ruby as taught by Nagy in order to minimize friction and reduce wear.

5. Claims 30 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's disclosure of the Prior Art in view of Patent Abstracts of Japan 62171515 to Yoshihiro and US Patent 6,439,477 to Sweet et al. as applied to claims 22 and 39 above, and further in view of US Patent 6,658,366 to Yamasue et al. (Yamasue et al.).

As to claims 30 and 46, applicant's disclosure of the Prior Art as modified by Yoshihiro and Sweet et al. disclose the claimed invention above except for the hard element being made of glass.

However, Yamasue et al. discloses a bearing (125) made of glass in a rotating device for the purpose of resisting deformation to reduce the affects of external vibrations and thus be more reliable (see column 6, lines 65-67 and column 7, lines 1-7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the hard element of the Prior art as modified by Yoshihiro and Sweet et al. from glass as taught by Yamasue et al. in order to resist deformation so that the affects of external vibrations are reduced and thus increase reliability.

6. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's disclosure of the Prior Art in view of Patent Abstracts of Japan 62171515 to Yoshihiro and US Patent 6,439,477 to Sweet et al. as applied to claim 32 above, and further in view of European Patent Application EP 0743464 to De Filippis et al. (De Filippis et al.).

As to claim 33, the Prior Art modified by Yoshihiro and Sweet et al. discloses the claimed invention above but does not disclose the hard element is a ball locked in the bottom of the socket.

However, De Filippis et al. discloses a steel ball (22) locked in the bottom of a socket (20) which abuts against a rotating axle (10) for the purpose of reducing friction (see column 2, lines 12-15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have made the hard element of Yoshihiro a ball as taught by De Filippis in order to reduce friction.

As to claims 34, applicant's disclosure of the Prior Art as modified by Yoshihiro and Sweet et al. disclose the tip is concave (see rejection of claim 32 above).

7. Claims 40, 42, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Australian Patent Publication 54,127/73 to Harvey in view of applicant's disclosure of the Prior Art and US Patent 6,439,477 to Sweet et al. as applied to claim 39 above, and further in view of Patent Abstracts of Japan 62171515 to Yoshihiro.

As to claim 40, Yoshihiro discloses the hard element has polished surface in the contact zone (see abstract: "specifying surface roughness" and "surface roughness is 0.1-6.0μm").

As to claim 42, Yoshihiro discloses the hard element is formed as a plate (see abstract).

As to claim 45, Yoshihiro discloses the hard element comprises a ceramic (see abstract).

As to claim 47, Yoshihiro discloses the hard element comprises stainless steel (see abstract).

Response to Arguments

8. Applicant's arguments filed 05/05/2009 have been fully considered but they are not persuasive.

Applicant argues that the Sweet et al. reference cannot be used because it teaches a post made of stainless steel and a bearing made of brass which is softer than stainless steel. The examiner reminds applicant that the Sweet et al. reference is used

in the combination to teach the concave structure and is not used to teach material selection.

Applicant argues that the Sweet et al. reference does not show a socket having a bottom that abuts the tip of the axle. The examiner respectfully disagrees. Sweet et al. shows an axle (240) which abuts a bottom of a socket (238) as shown in Figures 8 and 9. Furthermore, the socket and axle abut each other during rotation.

Applicant argues that the Harvey reference combined with Sweet et al. does not show the claimed invention. The examiner respectfully disagrees. The examiner maintains the rejections made above.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN REIS whose telephone number is (571)270-5060. The examiner can normally be reached on Monday through Friday 8:00am to 6:00pm EST.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RR/
Examiner, Art Unit 3752
/Len Tran/

Supervisory Patent Examiner, Art Unit 3752